

Winter 2013

Biology News, Winter 2013

University of Northern Iowa. Department of Biology.

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Biology *Views*

Winter Edition - 2013

University of Northern Iowa

Greetings from the Department of Biology



It is hard to believe that I am in my fifth year as Head of the Department of Biology at the University of Northern Iowa. With each passing year, I become more impressed with the quality of our faculty, staff, alumni and students. I hope this newsletter encompasses the pride I have in our Department and the impact it has had on those who have been a part of this endeavor. Although we have started doing a better job of maintaining contact with our recent graduates, we need to do much better in regaining contact with our alumni. In that regard, I hope that many of you will be willing to let us know what you are up to. Not only do we want to stay in contact and let you know what is occurring in our Department, but your input, opinions and accomplishments are important in our making the case for the educational value of the Department of Biology to the UNI upper administration, the state legislature, and the people of Iowa.

This past year was another outstanding year for our graduates. Not only did we place students into professional and graduate programs

at the University of Iowa, Des Moines University and Iowa State University, we also found more of our students spreading their wings, going beyond our state's boundaries. Our students have gone on to graduate and professional programs at Harvard, Duke, University of Pittsburgh, University of Minnesota, University of Hawaii in Hilo, University of Nebraska at Lincoln, and the University of Kansas Medical Center.

Our alumni have also represented our Department well and we are very proud of their accomplishments. Dr. Robert Good was named as president of the American College of Osteopathic Internists. Dr. Gary and Myrna Floyd were honored with the Purple and Old Gold Award for long-time support of UNI. I am sure there are additional accolades for others of you and I hope you will pass those along to me to include in the next newsletter.

Our current crop of students continues the legacy of award winning involvement in science. These students have received funding from the National Science Foundation, received awards for presentations at scientific meetings such as the Iowa EPSCoR All-Hands Meeting, and the American Society for Space and Gravitational Research Meeting, and been highlighted in regional newspaper articles for their work on prairie restoration.

Our faculty and staff continue to earn

more and well deserved recognition for their efforts in teaching, scholarship, and service to students. This past year a number of our faculty have been invited speakers at a variety of conferences, taken part in a documentary on the value of roots in the prevention of erosion, received teaching awards, and received grants to learn more about the advising of students wishing to pursue professional degrees. Our UNI Botanical Center continues to catch the eye of the public and the appreciation of those who participate in tours of this facility.

We have been fortunate in receiving funding from the Roy J. Carver Charitable Trust to purchase teaching laboratory equipment for many of our classes that are tailored for students wishing to pursue a career in the health fields. Funds from the Carver Charitable Trust also allowed us to purchase cutting-edge microscopes that provide our students the ability to perform classroom experiments and research that was previously unavailable to them.



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Focus on UNI Biology Alumni

◆ Kerry Bohl Sticker ('02)

Kerry Bohl Sticker recently published a research paper with Peter Stiling entitled "Herbivory by an introduced Asian weevil negatively affects population growth of an invasive Brazilian shrub in Florida" in the journal *Ecology*. Kerry is a student in the Department of Integrative Biology at the University of South Florida.

◆ Dr. Forrest Isbell ('05)

Dr. Forrest Isbell is completing post-doctoral work at the University of Minnesota. Dr. Isbell received his Ph.D. in Ecology and Evolutionary Biology at Iowa State University in 2010 and then pursued a postdoctoral research fellowship at McGill University. Forrest recently published an article in *Science*.

◆ Jeremy Hammen ('05)

Jeremy Hammen is finishing up his Ph.D. work at the University of Nebraska at Lincoln.

◆ Emy (Plakke) Monroe (BA'93-MS'95)

Emy (Plakke) Monroe has recently taken a molecular geneticist position with the US Fish and Wildlife Service in Onalaska, WI. She is responsible for managing the newly constructed Whitney Genetics Laboratory which will process environmental DNA (eDNA) samples collected from lakes and rivers across the country. The Asian Carp Regional Coordinating Committee has developed and funded management plans to detect, monitor, and respond to the threat of Asian carp in the Great Lakes. Part of this plan includes using eDNA as one of several tools to monitor for Asian carp in areas considered high risk for the introduction of carp into the Great Lakes, which will hopefully help prevent the spread of carp into the Great Lakes. The lab will coordinate with several various agencies including the US Geological Survey, the US Army Corps of Engineers, state resource management agencies, and the Great Lakes Commission. Eventually, Emy hopes that the lab can use their eDNA technology to survey and monitor endangered species, such as freshwater mussels, in the Upper Mississippi River.

◆ Brittany Boehnke ('12)

Brittany Boenke is attending Duke University's Physical Therapy Program.

◆ Amanda Brase ('12)

Amanda Brase is attending the University of Pittsburgh Medical School.

◆ Catherine Finke ('09)

Catherine Finke is employed at Pioneer HiBred as a Research Associate after working in a doctor's office for two years.

◆ Kelsey Hampton ('12)

Kelsey Hampton is in a Ph.D. program at the University of Kansas Medical Center in Kansas City, Kansas.

◆ Jack Kosmicki ('12)

Jack Kosmicki is in a Ph.D. program at Harvard University.

◆ Danny Lewis ('12)

Danny Lewis is attending the University of Minnesota Medical School.

◆ Kate Olson ('12)

Kate Olson was accepted into a Ph.D. program at the University of Nebraska Medical Center.

◆ Kelsey Lombard ('10)

Kelsey Lombard worked two years as a Micro Lab Tech in the Quality Assurance department at Novartis in Lincoln, NE but this year will be starting Pharmacy School at the University of Hawaii in Hilo!

◆ Brian Andersen (BA'00-MS'02)

Brian Andersen grew up in Marion, Iowa working in a greenhouse and garden center family business from an early age and learning to appreciate the natural world. After attending Regis High School he pursued further studies at the University of Northern Iowa on an athletic scholarship for both undergraduate (Biology and Spanish) and graduate degrees (Biology). During his time in the Biology Department at UNI he gained a deep appreciation for the relationship between the natural sciences and field research fostered by his research with Dr. Kurt Pontasch, studying aquatic ecosystems. After marrying his wife Ali, he worked in pharmaceutical sales for several years in the Chicago area before deciding to pursue training at the University of Iowa, College of Dentistry. After completing his training in general dentistry he has practiced in Wisconsin and Iowa, and has been with Kimball and Beecher Family Dentistry in Waterloo and Cedar Falls for the last several years. He enjoys activities associated with UNI and the Cedar Valley as well as spending time in the outdoors with his wife Ali and their three young children.

◆ Lindsey Vore ('05)

Lindsey Vore grew up in Holstein, Iowa. Her father was a dentist and she worked as his dental assistant for two summers. Through that, she learned the trade of dentistry and the importance of oral health. After attending Galva-Holstein High School, she started at UNI as a nursing major. After one semester, she switched over to a Biology major with a Chemistry minor. After 3 years, she graduated and went straight to dental school at The University of Iowa, College of Dentistry. After completing her dental degree there in 2008, she practiced in Cedar Falls for three years, moved to Clear Lake for one year, and has now returned to the Cedar Falls area and works with Kimball and Beecher Family Dentistry in the Cedar Falls office since October. She and her husband, Josh, are excited to be back in the area and look forward to raising their two young children in the area.

Focus on UNI Biology Students

◆ **Lucas Joers**, an undergraduate student, recently won first prize for his poster presentation at the first annual Iowa EPSCoR All-Hands Meeting. The poster, which was titled “The Effect of Diversity on the Evolution of Physiology in Switchgrass (*Panicum virgatum*)”, showcased the findings of Lucas’s summer research project at UNI under the supervision of Dr. Mark Sherrard.

◆ **Austin Jones** received funding from microMORPH, a part of the National Science Foundation that supports summer internships/training grants for undergraduates. Austin is a student under the mentorship of Dr. Julie Kang. His research project involved the development of leaf lobes in wild species of the morning glory family. As a result of the funding, Austin was able to spend a portion of his summer at the University of California-Davis, learning techniques related to his research.

◆ **Bryan Hendrickson** was selected for a poster presentation at “Research at the Capitol” this past spring. Bryan is a student under the mentorship of Dr. Julie Kang.

◆ **Kayla Olson** was accepted into the graduate program at Des Moines University in the Master’s degree in Human Anatomy.

◆ **Bryce Duchman**, who graduated in May, 2010, and is currently in medical school at the Carver College of Medicine, University of Iowa, had his abstract accepted for presentation at the November 28-December 1, 2012 meeting of the American Society for Space and Gravitational Research, New Orleans.

◆ **Stacey Howes**, sophomore from Fairfax, IA, has had her abstract accepted for presentation at the November 28-December 1, 2012 meeting of the American Society for Space and Gravitational Research, New Orleans. On the basis of her abstract she was invited to make an oral presentation. Stacey received recognition for one of the best talks given by an undergraduate student.

◆ **Sam Berg and Jessica Williams** Biology graduate students along with Professor Jeff Tamplin, received \$2,000 in funding from the Black Hawk County Conservation Board to facilitate their studies of wood turtle micro-habitat usage, movement patterns, and thermally-related behavior in the Beaver Creek Falls Access Area a few miles northwest of campus.

◆ Jarrett Pfrimmer

In fall 2011, Jarrett Pfrimmer completed an assignment in Dr. Mark Myers’s Wildlife Ecology and Management class to develop a habitat management plan for a site on or



Jarrett Pfrimmer walks through prairie grass at the Cedar River Natural Resource Area

near campus. One year later, prairie grass was growing on 20 acres of former cropland along Dry Run Creek, which flows past the UNI campus en route to the Cedar River. The purpose of the stream buffer project was to reduce soil erosion in the farm fields, to improve the quality of water flowing into the Cedar River, and to provide habitat for songbirds, pheasants, and other wildlife. Jarrett worked with the Black Hawk County Soil and Water Conservation District to line up cost share funding for the project. Jarrett also took advantage of expertise at UNI’s Tallgrass Prairie Center to plan and execute the 120-foot wide buffer strips on both sides of the creek..

Pfrimmer, currently enrolled in the M.S. program, is also working with Dr. Myers on another major project with the potential to restore natural functions to the Cedar River watershed — research to determine the feasibility of native prairie as a biofuel feedstock. Jarrett studies bird habitat use and nesting ecology at UNI’s Biomass Research Site, located at the 593 acre Cedar River Natural Resource Area about 10 miles south of Waterloo.

Jarrett was recently awarded a \$750 Myrle Burk Scholarship in Ornithology from the Iowa Academy of Science. Jarrett will soon complete his master’s thesis on “Bird Use of Heterogeneous Native Prairie Biofuel Production Plots” and was recently admitted to a PhD program at the University of South Dakota.

Department News

Microscopes purchased with Carver Trust grant

The newly acquired Microscope Facility housed in McCollum Science Hall in the Biology Department contains three state-of-the-art microscopes purchased through the Roy. J. Carver Charitable Trust in 2012. Through this grant, the department was able to purchase a Zeiss Axioscope Compound microscope, a Zeiss Discovery V12 Stereomicroscope, and a Zeiss LSM 700 laser confocal microscope.

The Zeiss Axioscope Compound microscope has fluorescence capability and multiple lenses that allow the user to view their samples on prepared slides using various light diffraction methods. The users are able to magnify their samples up to 1000X magnification. The Zeiss Discovery V12 Stereomicroscope allows users to mount whole fixed or fresh samples directly onto the illumination plate. It also has fluorescent capability and magnifica-

tion of up to 400X. Finally, the Zeiss LSM 700 laser confocal microscope is the newest in microscope technology.

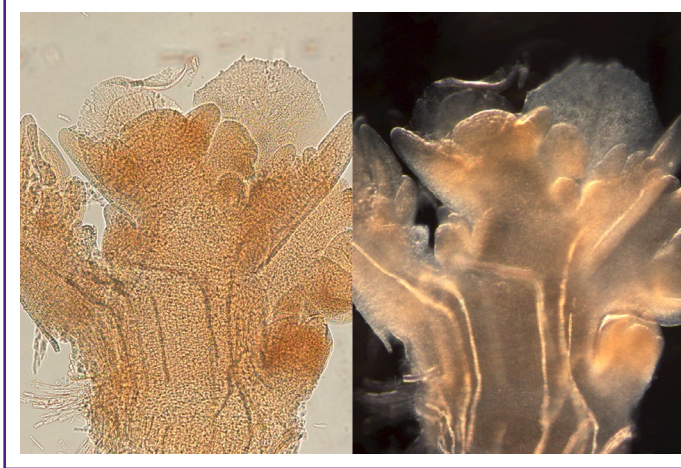
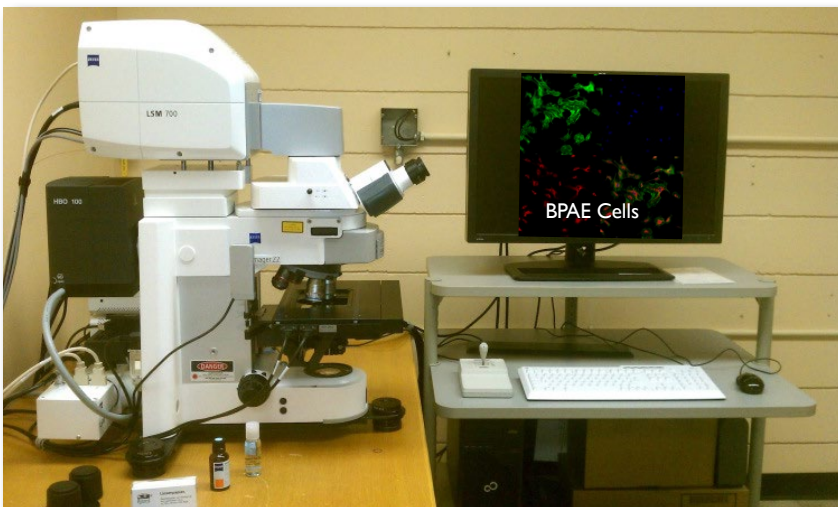


Image as seen on the new Confocal Shoot apex – (left) Differential Interference Contrast (DIC), (right) Dark Field (100X magnification)

Users can use fluorescence, mount and view fresh samples, or optically section through their specimen. All of the above microscopes are digitally controlled and images are acquired within seconds.

The purchase of these microscopes allows biology students to view and use state-of-the-art research-grade microscopes in their classrooms and in their own research. This facility is currently used, among other courses,

as a teaching resource in our General Biology: Cell Structure and Function course as well as being fully utilized in the newly developed Light Microscopy Methods in Biology course. There is no doubt that these microscopes will be an innovative teaching resource in many other courses in the Biology Department. We are proud to have these microscopes in our department as they will be sure to enhance visual and technical learning in the classroom and laboratories for our students for many years to come.



New Confocal LSM 700 for lab



Canola Flower



Bee Eye



Fern gametophytes



Bee

Department News (Continued)

Two-headed planarian!



A two-headed planarian (*Dugesia*) was created by students this past fall semester in one of our introductory Biology courses, General Biology: Cell Structure and Function. *Dugesia*, more commonly known as planaria, is a type of flat worm that belongs to the Phylum Platyhelminthes. Although they are one of the simplest multicellular organisms, planaria have amazing regenerating capabilities that scientists have known about for over 100 years. If the head of the planaria is cut from the body, the remaining body will regenerate a complete head. Likewise, if the planaria is cut in half, vertically or horizontally, it will fully regenerate the other half of the body.

This ability to regenerate is thought to be due to stem cells called neoblasts. These cells can self-renew and give rise to all cell types in planarians. It is widely accepted that chemical substances, known as morphogens, respond to concentration gradients (“diffusion gradient model”) that allow undifferentiated cells (such as neoblast cells) to sense their position in the body. In one of the General Biology: Cell Structure and Function labs, students investigate the diffusion gradient model during regeneration using planaria as their model system. During lab, students make predictions whether or not their planaria will fully regenerate based on the types of cuts they make and whether the diffusion model is correct.

This year, a two-headed planarian was observed in Christy Carr’s laboratory section. To document this occurrence, images such as the one above were documented using the department’s new Zeiss stereomicroscope that was purchased from a grant from the Roy J. Carver Foundation. Videos were also taken of this two-headed planaria moving in a drop of water using the same stereomicroscope.

Discoveries such as this two-headed planarian allow our students here at UNI to experience how research can uncover unexpected and fun (!) results in class.

UNI Day in the Capitol on February 11, 2013

February 11, 2013 was UNI Day in the Capitol. It would be wonderful if alumni attend future UNI days at the Statehouse. You can linger near the UNI booths that will be set up and greet legislators or you can come upstairs with Jeneane Beck, UNI State Relations Officer, and meet with your hometown legislators to discuss the importance of your biology degree and why you chose UNI.

Another way to get involved is to write a quick note to your local legislators reminding them that the Department of Biology continues to provide outstanding educational value at UNI and that as a graduate you have a vested interest in seeing the program continue to thrive. Alumni can attend a Saturday coffee that legislators often host or even talk to your neighbors about why funding for the public universities is so important. We cannot expect lawmakers to support us if voters never make it an issue during the campaigns.

For more information about UNI Day In the Capitol, please contact Jeneane Beck (jeneane.beck@uni.edu) or go to <http://www.uni.edu/govrel/legislative-update> for updates.

Letter of appreciation.....

Hello Dr. Saunders,

I would like to share a letter of appreciation with you as the head of the Biology Department at UNI. I was the Director of the North Central Association for Science Teacher Education and our regional meeting was held at UNI this past month, October 11 – 13, 2012. One of the tours provided to our group was of the Botanical Center, led by Billie Hemmer. It was a wonderfully informative and enjoyable tour! The group that attended appreciated the diversity of the flora and the information that Billie was able to provide. We all agreed that the Center was a gem on the UNI campus. Thank you!

Karen

Karen M Bengtson, PhD
Past NC-ASTE Regional Director
Science & Environmental Ed Ped
Education Department, CSBSJU

Faculty and Staff News

Dr. Kimberly Cline-Brown Receives Excellence in Teaching Award

Dr. Kimberly Cline-Brown received the Excellence in Teaching in the Liberal Arts Core Award for the 2011-2012 academic year. Kim has been a valuable member of the Department of Biology since her arrival in 2002, where she has taught the lecture portion of Life: Continuity and Change and oversees and teaches the laboratory portion of Life: The Natural World. The Department of Biology is appreciative of her passion and dedication in the teaching of our students enrolled in Liberal Arts Core classes. Student assessments of Dr. Cline-Brown show that she creates a positive learning environment with comments that her teaching style “makes each student feel important.” She is not afraid to try various teaching techniques in the classroom and continually finds better ways to engage students in the learning process.

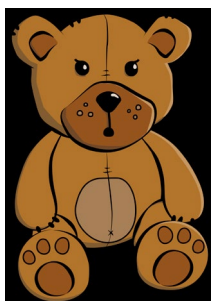
Joan Smothers attends national advising meeting

Joan Smothers, Biology’s Academic Advisor, received a \$1000 travel grant to attend the 20th National Association of Advisors for the Health Professions National Meeting in Baltimore.

NAAHP is the only organization exclusively dedicated to the needs of the health professions advisors. There were great speakers such as Alfredo Quinones-Hinojosa, M.D., an internationally renowned neurosurgeon and neuroscientist from The Johns Hopkins Bayview Medical Center.

With more than 50% of UNI biology majors looking to attend professional schools, this was a great way to network and stay current on what students need to do to be successful in their next step.

Pre-Vet Club project gives aid to shelter animals *written by Megan Orr*



The Pre-Veterinary club is one of many pre-professional student organizations in the Biology Department. The club is open to any UNI student interested in pursuing or learning more about the field of veterinary medicine. The members of the club organize and participate in service projects each semester to benefit local organizations dedicated to improving animal health and welfare. One of these service projects

Public speaking engagements for Biology faculty

Dr. Steve O’Kane gave two invited talks at Whitman College in Walla Walla, Washington. One of Steve’s talks was given to the Department of Biology at Whitman College and was entitled Systematics of a Rapidly Evolving Group of Plants: *Physaria* (Brassicaceae). In addition, Steve gave the yearly endowed Brode Lecture to the college and town community called Botanical Exploration in the Unexplored West: New Mexico.

Dr. O’Kane also gave an invited talk at the Botany 2012 meetings held in Columbus, Ohio in July. He was invited to speak at a half-day Colloquium titled “Principles of crucifer evolution”, where he gave a talk on “Evolution and classification of *Physaria* (Brassicaceae).”

Dr. Bob Seager gave an invited talk at the Iowa Community College Biology Teachers Conference on September 29. Bob’s talk was titled “How Science and Religion Can Coexist in a Climate of Hostility”, where he pressed the appreciation of the complementary roles of science and religion that can enrich our lives.

Dr. Mark Myers gave an invited talk in recognition of the 40th Anniversary of the Clean Water Act at Hartmann Reserve Nature Center on October 18, 2012.

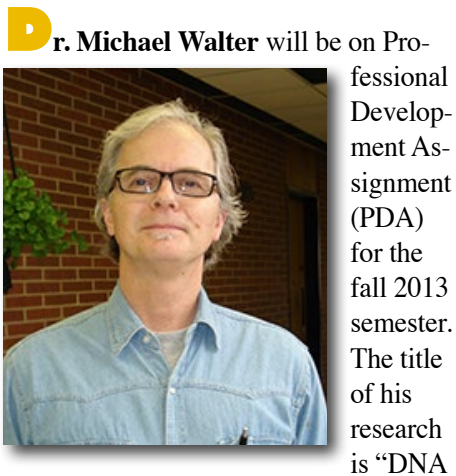
Dr. Laura Jackson was an invited speaker at The Ohio State University where she delivered a talk on “Native Prairie: Restoring Resilience to Farms and Watersheds” on October 12, 2012. This was part of a seminar and discussion series held within the Agroecosystems Management Program, a unique interdisciplinary program based at the Ohio Agricultural Research and Development Center (OARDC) campus of The Ohio State University.

Dr. Jackson has been asked to participate in a documentary tentatively called “The Watershed Project” being produced through Stornoway Productions headquartered in Toronto Canada. Film crews were at the Biology Research Center for two days filming Dr. Jackson’s work on the value of roots in the prevention of erosion.

took place in the fall of 2012, when the club hosted a stuffed animal drive to benefit the Black Hawk Wildlife Rehabilitation Project (BHWRP). The club collected new and gently used stuffed animals from staff, faculty, and students in the Biology Department to donate to the BHWRP, where they would be used as companion animals for animals being rehabilitated. The drive was successful in collecting 23 stuffed animals, which were then delivered to the BHWRP center located in Cedar Falls, Iowa. This spring, the stuffed animals will be used for orphaned and injured animals that are staying at the center before their release back into the wild.

Faculty and Staff News (Continued)

Faculty on Professional Development Assignment



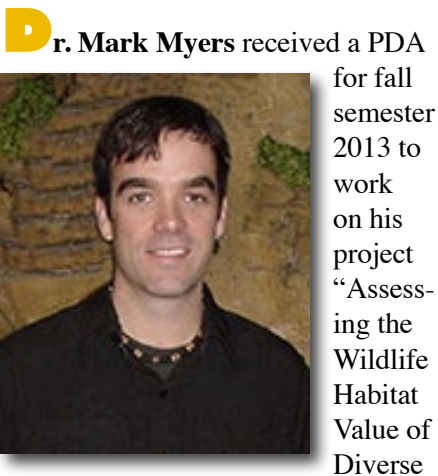
Dr. Michael Walter will be on Professional Development Assignment (PDA) for the fall 2013 semester. The title of his research is “DNA sequence-mapping, structural protein determination and analysis of two *Bacillus anthracis* spore-adhering bacteriophages.” This project includes both applied and basic virology research. Viruses of bacteria (bacteriophages: ‘phages’) are 20-200 nanometers in length and usually feature the ‘head/tail’ shape, with the DNA being stored in the

‘head’ until host-binding and infection. Phages naturally attach to specific hosts, infect and often kill the anthrax bacteria. Our main emphasis in the lab targets specific host binding and other non-specific binding and adherence of the phages. Our applied emphasis helps to decrease the threat of bio-terror weapons based on anthrax spores, by studying phage binding toward development of detection, decontamination and therapy applications. We characterize phage primary protein structure to add to the knowledge base of this huge, but understudied group. My Fall 2013 PDA will concentrate on the genetic aspects of the several ‘structural’ proteins that comprise the ‘shell’ of the phage particle. We are interested to see if any of the proteins can act as antibiotics, decontaminants or affinity reagents in rapid spore detection technologies.



Dr. Pete Berendzen is on a PDA this semester (Spring 2013). The focus of the PDA

is to work on a project funded by a State Wildlife Grant from the Iowa DNR. This funding is appropriated by the United States Congress for state nongame wildlife programs to work on projects relating to species of greatest conservation need identified in Iowa’s Wildlife Action Plan. The focus of the project is to use a multidisciplinary approach to provide the necessary information for better conservation of two species of native fishes distributed in northeast Iowa. The study combines genetic and ecological data with ecological niche modeling to establish a framework for conservation efforts for *Moxostoma duquesnei* (black redhorse) and *Rhinichthys cataractae* (longnose dace). Two graduate students, Brigid Wieman and Ryan Kurtz, are working on the project for their Master’s theses in Environmental Science. In addition three undergraduate students, Nikki Miller, Hayley Rinehart and Erica Scullin are working on the project for their University Honor’s and Biology Senior theses.



Dr. Mark Myers received a PDA for fall semester 2013 to work on his project “Assessing the Wildlife Habitat Value of Diverse Biomass Energy Prairie Plantings in an Agricultural Landscape.” Dr. Myers and his students, in collaboration with UNI’s Tallgrass Prairie Center and with support from the Iowa Power Fund, are conducting research to determine optimal methods for managing native prairie vegetation as

a bioenergy feedstock. Since 2009, Dr. Myers and his students have annually monitored vegetation characteristics and bird and butterfly community dynamics at an experimental research site in Black Hawk County to explore the prediction that more diverse biofuel crops will support a greater abundance and diversity of wildlife species over time. During the PDA, Dr. Myers plans to continue long-term monitoring of the site, to learn new statistical and spatial data analysis techniques, and to publish results of the study to date. Ultimately, Myers and colleagues plan to develop guidelines for landowners interested in producing biofuel feedstock from prairie vegetation on marginal lands in a manner that improves wildlife habitat. Current Biology students

involved in the project include Jarrett Pfrimmer, Benjamin Hokscho, and Andrew Ridgeway.

Student Clubs

Tri-Beta *written by Chelsea Meier*

We are the Delta Iota chapter of the Beta Beta Beta National Honor Society. The “betas” of our namesake are balanos, boudetase, boax. The fact that those words are Greek for “acorn,” “little bird,” and “fish” tell you everything you would ever want to know about our organization....

What’s that you say? You’re now even more confused as to who we are? Well, allow me to clarify things for you.

Our society, often called “Tri-Beta,” was founded in 1922. By 1934, UNI had its own chapter, and the rest is history. Even back when UNI was “Iowa State Teachers College,” Tri-Beta was THE organization to be a part of for any aspiring biologists. This is where the acorn, little bird, and fish come into play: acorns represent life on the ground. Birds represent life in the air, and fish represent life in the water. Beta Beta Beta can therefore be summed up in a fourth “B” word—bios, meaning “life.”

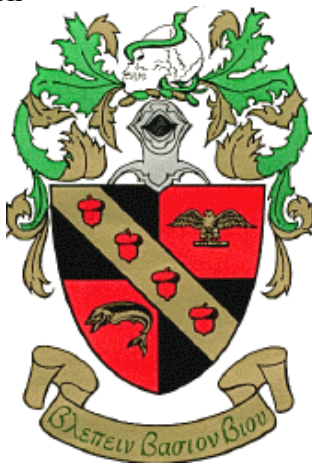
To become a member of our chapter, students must simply have an interest in Biology, the study of life. To encourage further interest, Tri-Beta has established three

major objectives: scholarship in the biological sciences, dissemination of biological knowledge, and research. Here in the Delta Iota chapter, we promote scholarship by reserving Full Membership (the highest of three

levels of membership) for those who earn at least a “B” average in several key Biology courses. In addition, members of Tri-Beta are encouraged to disseminate biological knowledge by participating in Biology-related volunteer work, as well as conducting research.

Tri-Beta’s symbolism also includes two colors: red and green. Red stands for zoology while green stands for botany. Because Delta Iota welcomes any and all students with a love of bios, our membership includes both “red” and “green people.” Current members include those looking to become doctors, veterinarians, research scientists, and ecologists, among many others.

Additionally, our volunteer events are always “red” (e.g., hosting blood drives, providing breakfast for Biology faculty) or “green” (e.g., participating in the Adopt-a-Highway program, staffing events hosted by the Hartman Reserve Nature Center).



Reconnect with the Department of Biology

Whether it has been decades since you were last a UNI student or just last year, we invite you to reconnect with the students, faculty and staff in the Department of Biology and make an impact.

- 1) **Employment opportunities** – Does your company hire biology majors? Full-time positions, part-time positions, summer internships, whatever your needs might be, we’d like to make students aware of the career opportunities available to them with your organization.
- 2) **Job shadowing and informational interviewing** – Many biology majors are at UNI as the first step to their goal of professional or graduate school. In order for them to confirm their interest in their major area of study, we encourage them to job shadow and participate in informational interviews. If you are willing to meet with a student for 30 minutes or half day let us know.

- 3) **Host a student organization** – The Department of Biology has 12 active student organizations who invite professionals to campus to speak, as well as travel to local organizations for tours and informational meetings. If you are willing to speak to a student group, or host a group of students we can connect you with some bright and motivated students hoping to follow your path.
- 4) **Faculty as consultants** – Department of Biology faculty members are actively engaged in research. If their area of interest matches yours, we can connect you to discuss mutual challenges and strategies. You can find information on faculty research at: http://www.biology.uni.edu/about_facstaff.html
- 5) **Micro contributions** – You may have heard of micro lending or micro financing. The Department of Biology is building on the concept. Biology Alumni funds can be pooled together

to make a huge impact with a small donation. We have students in need of scholarship funding, or paid research opportunities which would benefit both the student and faculty members. Now you can contribute to the success of students, faculty and the department by being a part of collective resources. Through UNI Foundation, biology alums can give small amounts that add up to make a big difference! If 100 alums gave \$50 each we could fund several undergraduate scholarships or research opportunities and the students would feel an immediate impact.

If any of these opportunities are a fit for you or if you have other ways you’d like to partner with the Department of Biology, please contact Dr. David Saunders at david.saunders@uni.edu, 319-273-2456 or Joan Smothers at joan.smothers@uni.edu, 319-273-2010 as a first step.

Faculty/Staff

Retiring Faculty

❖ Cherin Lee



As a Biology graduate student in the fall of 1980 Cherin never dreamed that she would spend 32 years at UNI! She has two degrees from

UNI, a B.A. Biology Teaching and a M.A. Biology. She spent nine years in K-12 school systems where she added athletics to academics by assisting her husband Bob in his coaching career which ultimately spanned 32 years. She became accomplished at many skills that earned her the moniker of “Mrs. Coach”.

After 11 years teaching at UNI she started doctoral work at Kansas State University. After a residency year and three years of completing the degree the “hard” way, working full time in our department, she became Dr. Lee in 1997. Cherin has spent her entire career wearing two “hats”, one in the Biology Department and one in Science Education. She assumed part-time administrative duties for science education by becoming Chair in 2001 and has continued in that capacity. She has taught introductory life science in the liberal arts core, specifically to Elementary Ed. Majors. Her favorite courses have been secondary science methods and graduate courses because she impacts a broader range of students through teaching teachers.

Cherin has always contributed a huge service load with student advising, committee work and task forces ranging from the university level to the Graduate College, to the Biology Department and Science Education and most recently to facilitating the STEM movement at UNI. She served as the Chair of the Teacher Education Faculty and in

summer 2011 became the Coordinator of Secondary Teacher Education – hat #3! When asked why UNI for 32 years Cherin replied that she has a passion for: chocolate, teaching and purple and gold! She will find it difficult to walk away from being immersed in UNI, but states that it’s time to think about her life and being a wife.

❖ Ed Brown



After more than 20 years at UNI, Dr. Ed Brown will be retiring at the end of the academic year. Ed started his career at the

University of Alaska Fairbanks and worked on the Exxon Valdez oil spill, but returned to the Midwest in 1992 when he was hired as a Professor of Biology and the founding Director of Environmental Programs at UNI. He was also the founding Director of the Advanced Technology Environmental and Energy Center (ATEEC) Fellows Institute, an NSF supported professional development program for high school and community college teachers in the environmental science and technology fields. Throughout his career, Ed developed innovative methods in the environmental sciences, from the sheen screen for studying biodegradation of hydrocarbons to phosphorus sequestration with iron mine tailings.

Ed’s fondest memories of UNI involve undergraduate and graduate students. At a party in December, Ed said that “all of the good things that have happened in my career have been because of students”. He plans to continue his involvement with environmental issues as a member of the Department

of Energy and the Nevada Site Specific Advisory Board, to travel (especially to the cabin in Minnesota), and to spend more time with family.

New Faculty

❖ Nilda Rodriguez



Dr. Rodríguez is a native of the Caribbean island of Puerto Rico. She earned a BS in Microbiology from the University of Puerto Rico

and a Ph. D. in Microbiology from The University of Iowa (UI). Her dissertation research focused on the macrophage response to infection. After her dissertation, she trained as a postdoctoral research fellow in the Division of Infectious Diseases at the Carver College of Medicine (UI). During that time she expanded her research to examine how the interactions at the interface of pathogens and their host cells affect the final outcome of infection. The data from these studies enabled Dr. Rodríguez to secure funding from the Department of Veterans’ Affairs (VA) to expand her research. In particular, she initiated a new set of studies to examine the roles of cholesterol and testosterone in modulating the macrophage response to infection with the parasitic protozoan *Leishmania infantum chagasi*.

In addition to research, Dr. Rodríguez enjoys teaching. She just finished her first semester at UNI where she taught Cell Biology. She will also teach Principles of Microbiology. She is looking forward to building a research program at UNI to further examine how host-pathogen interactions affect the immune response.

You make a difference! *Message from our donors. . . .*

Floyds receive Purple and Gold Award

UNI alumni, Dr. Gary (Class of 1962) and Myrna (Class of 1963) Floyd, were honored with the Purple and Gold Award for long-time support of UNI. The Floyds' endow a scholarship for future science educators, and annually fund two undergraduate research assistantships in the Department of Biology.

This award is the most prestigious award for lifetime giving that the University of Northern Iowa Foundation bestows on behalf of the University. This award recognizes the extraordinary, long-time support of an individual or couple who have had a significant and inspiring impact on UNI.

Gary and Myrna Floyd spent their careers teaching and sharing their love

of science with students. Gary is the retired Dean of Biological Sciences at Ohio State University, and Myrna



Myrna Floyd, Alex Poppinga, Meghan Orr, and Gary Floyd

is retired from middle grades science education. For more than four decades, they have been investing in the University of Northern Iowa and its students through their volunteer efforts

and financial resources. They served on the Students First National Steering committee and on the 2012 Golden Grad Reunion committee.

They are life members of the UNI Alumni Association, and are recipients of the Alumni Achievement award. Gary and Myrna have long supported the Dean's Fund and the Annual Fund.

The Floyds' legacy will continue to impact future students and faculty with gifts from their estate plan. Their future gifts will create another endowed scholarship, an

endowed undergraduate assistantship fund and a special endowment within the college's Dean's Fund. Finally, their generosity will create the Myrna & Gary Floyd Endowed Professorship in Plant Biology. Their philanthropy will have an unending effect on UNI students and faculty.

Dr. Robert Good, DO, installed as President of American College of Osteopathic Internists



Dr. Robert Good

Dr. Robert Good, DO, FACOI ('74 Biology) was installed as president of the American College of Osteopathic Internists (ACOI) on October 20 during the organization's national conference in Orlando. The ACOI mission is to advance the practice of osteopathic internal medicine through education, advocacy, research and service. Dr. Good, a native of Keystone, IA, is a board-certified internist practicing in Mattoon, IL. He is the medical director of Carle Foundation Physician Services, a large multispecialty group in southern Illinois. Dr. Good has served as the organization's Secretary-Treasurer and on numerous committees. He

also chairs the Clinical Practice Committee and the Phoenix Physician Task Force, and serves on the Fundraising Committee and Committee on Government Affairs. He achieved the degree of Fellow in 2000 and was first elected to the ACOI Board of Directors in 2006. Dr. Good and his wife, Brenda ('74 Mathematics) live in Charleston, IL. The Goods were members of the former College of Natural Sciences Advisory Board and have long supported the Department of Biology and annually fund the Dr. Robert & Brenda Good Undergraduate Research Fellowship in Biology.

YOU CAN MAKE A DIFFERENCE!

We take much pride in the accomplishments of our students and we hope that we have played some role in their success. We take very seriously our responsibility to educate and provide opportunities to our students and we are continually looking for ways to improve. With each passing year this has become increasingly difficult. Our departmental budget has not seen an increase in the past twelve years. Yet the costs of equipment, supplies, and travel have continued to rise. Our faculty have attempted to meet these challenges and have found ways to support students and provide students with opportunities by obtaining external funds. However, this too has become more difficult.

The cost to students continues to rise through increased tuition coupled with fewer opportunities available to students

via University-sponsored programs. It now costs the average student more than \$25,000 per year to attend UNI. Most of our students work outside of the University to support themselves and to pay for tuition. This in turn can impede their education and reduce their time for experiential learning. Although working while attending school can benefit students in learning time management skills, it may also defeat the purpose of attending a university and taking part in all that it can offer.

The financial support of many of our alumni help to provide what would otherwise be lost opportunities to our students. Many of the student scholarships that are offered via private funds have the caveat that students must work within the Department in order to receive scholarship funds. This is a wonderful idea as it requires the

students to participate in our Department and we hope this, in turn, stimulates the students to think of our Department as their home away from home. It provides faculty the opportunity to better know our students and provides our students the opportunity to interact with faculty, a win-win situation for both. Unfortunately, we have too few of these scholarship opportunities available for our students. Your financial support of existing scholarships or the endowment of new scholarships would ensure that our students today receive the same opportunities that were afforded to you. This is a legacy worth leaving. Your financial support of student scholarships and the Department as a whole would be much appreciated. Listed below are the current scholarship funds available for students as well as the Department's Biology fund which supports student/faculty research.

Scholarships and Funding

◆ **Biology Alumni & Faculty Undergraduate Research Fund**

This fund is to be used for general undergraduate support such as but not limited to a partial student award/stipend, research or presentation related expenses, research conference travel, etc.

◆ **Biology Awards & Honors**

This fund is used to support "hard working" students who do not have any other financial assistance. Biology faculty nominate deserving students.

◆ **Biology Department Fund**

This fund is for general support for the Department of Biology. Monies from this account are used to support faculty/student research, faculty/student travel, and purchase of teaching supplies and equipment.

◆ **Biology Preserves Fund**

This fund is used to support the development and maintenance of the Biological Preserves System at UNI, including such items as purchase of trees, shrubs, and equipment as well as for the development of exhibit areas and support of personnel involved.

◆ **Caroline Czarnecki Biological Sciences Scholarship**

This scholarship provides support for

students who demonstrate merit and financial need, with preference given to students with a declared major in biological sciences, with a grade point average of at least 3.0. The award amount is \$1000.

◆ **Myrna and Gary Floyd Undergraduate Research Assistantship**

This assistantship is to provide support for two undergraduate research students in the Department of Biology.

◆ **Dr. and Mrs. Robert Good Summer Research Fellowship**

This fellowship is intended to support undergraduate student research carried out through the summer. The fellowship provides \$3000 for the support of an undergraduate research project.

◆ **Dr. Timothy Greiner Undergraduate Biology Scholarship**

This scholarship provides support to undergraduate biology majors who are in no less than their second semester of their major. The award amount is \$1000.

◆ **J.S. Latta Biology Scholarship**

This scholarship provides support for a declared biology major, either a freshman or sophomore having either completed or currently enrolled in both Organismal Diversity and Cell Structure and Function. The student must

have GPA of 3.5 or higher. The amount of the award is between \$250 and \$500.

◆ **Dr. Joan and Dan Meyer Biology Scholarship**

This scholarship supports students who demonstrate merit and financial need with preferences given to students with a declared major in Biology, with a grade point average of at least 3.2.

◆ **Dr. Alan R. Orr Research Awards Endowment Fund**

This award supports undergraduate experiential learning through hypothesis-driven research. Applicants must be Biology majors with a grade point average of at least 3.2 and conducting research with a faculty member in the Biology Department.

◆ **Bear and Sandy Stevens Family Endowed Biology Education Scholarship**

This scholarship supports students who demonstrate merit and financial need with preference given to students with a declared major in Biology Teaching, with a grade point average of at least 3.0.

◆ **Dr. Dave Swanson Research Award**

This award supports undergraduate experiential learning through hypothesis-driven research. Applicants must be Biology majors conducting research with a faculty member in the Biology Department.

Support for students or department

Would you like to support a Biology student and/or the Biology Department?
If so, please fill out the form below and return it to:

UNI Foundation Financial Services

1223 W. 22nd Street
Cedar Falls, IA 50614-0239

If you would like to start your own scholarship, contact Cassie Luze
cassie.luze@uni.edu or Phone: 319-273-6360

Name _____

Address _____

City _____ State _____ Zip _____

E-mail: _____ Phone _____ Is this a cell phone _____

☐ Please check if new address, phone or email.

I/we would like to support the following fund(s)

- \$ _____ Biology Alumni & Faculty Research Fund (21-222596)
\$ _____ Biology Department Fund which includes Dr. David Swanson Research Award (21-221607)
\$ _____ Biology Awards & Honors (21-210342)
\$ _____ Biological Preserves Fund (21-220162)
\$ _____ Caroline Czarnecki Biological Sciences Scholarship (21-212250)
\$ _____ Myrna & Gary Floyd Undergraduate Research Assistantship (21-222165)
\$ _____ Dr. and Mrs. Robert Good Summer Research Fellowship (21-222342)
\$ _____ Dr. Timothy Greiner Undergraduate Biology Scholarship (21-212261)
\$ _____ J.S. Latta Quasi-Endowed Biology Scholarship (20-210303)
\$ _____ Dr. Alan R. Orr Research Awards Fund (21-211914)
\$ _____ Total

Online _____

Go to the online pledge form at www.uni-foundation.org/ and click on "Make an online gift". You will need to enter the specific name(s) of the Biology projects in the "Other" box near the bottom of the web form.

Matching Gifts: My (or my spouse's) company, _____ (name) will match my gift. Please contact your HR office for details and the matching gift form to be submitted with your payment.

Check _____ ☐ Check enclosed, payable to the UNI Foundation

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Department of Biology

University of Northern Iowa

Cedar Falls, IA 50614-0421

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return this form to:

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University of Northern Iowa
Cedar Falls, IA 50614-0421

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Contact info: David Saunders
Department Head
319-273-2456
david.saunders@uni.edu

Web info: <http://www.biology.uni.edu/>

and come see what we have. . .

